

# ***Homo polyglottus:* Semiosphere as a model of human cognition**

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**Abstract.** The semiosphere is arguably the most influential concept developed by Juri Lotman, which has been reinterpreted in a variety of ways. This paper returns to Lotman's original "anthropocentric" understanding of semiosphere as a collective intellect/consciousness and revisits the main arguments of Lotman's discussion of human vs. nonhuman semiosis in order to position it in the modern context of cognitive semiotics and the question of human uniqueness in particular. In contrast to the majority of works that focus on symbolic consciousness and multimodal communication as specifically human traits, Lotman accentuates polyglottism and dialogicity as the unique features of human culture. Formulated in this manner, the concept of semiosphere is used as a conceptual framework for the study of human cognition as well as human cognitive evolution.

**Keywords:** semiosphere; cognition; polyglottism; dialogue; multimodality; Juri Lotman

The concept of semiosphere is arguably the most influential concept developed by the semiotician and literary scholar Juri Lotman (1922–1993), a leader of the Tartu-Moscow School of Semiotics and a founder of semiotics of culture. In a way, it was the pinnacle of Lotman's lifelong study of culture as an intrinsic component of human individual and collective consciousness and as a precondition of all modelling processes, including cognition and thinking. It was also the synthesis of the core principles of Lotman's semiotics that can be formulated as the principle of *cultural isomorphism* – which postulates that all semiotic entities from individual consciousness to the totality of human culture are based on similar heterogeneous mechanisms of meaning-generation – and the principle of *textuality of culture*, the assumption that culture is an exceptionally complex text that in turn consists of texts within texts.

The purpose of this paper is to position Lotman's concept in the modern context of cognitive semiotics and the question of human uniqueness in particular. Although I do not strive to reconstruct the chronology of Lotman's work in detail, it is important to pay heed to some important concepts that Lotman developed throughout his academic career and that later crystallized into the concept of the semiosphere. One of such concepts was the notion of text as a meaning-generating mechanism.

## Text and dialogue

During the 1960–70s, the most oft-repeated thesis in Lotman's works was that any meaningful message can only be produced at the intersection of at least two languages and that in order to reflect a given reality at least two languages are needed (see Lotman 1977: 298, 1978, 1979, 1983, 1987b, 1988, 1990: 3, 77, 1992c, 1992d). Consequently, the text appears to be a polyglot and dialogic entity, and the concept of *translation* lies at the base of the process of meaning generation and cognition as such.

Already in *The Structure of the Artistic Text* (1970), Lotman states that the communication in culture is effectuated between two *polyglots*, who actively choose the best possible language in order to produce and receive a message (Lotman 1977: 73). Furthermore, Lotman (2005: 218–219) rejects the traditional (and essentially Saussurian) scheme of communication LANGUAGE > TEXT > DIALOGUE, in which texts are *products* of the language system. He proposes another model:

DIALOGIC SITUATION > REAL DIALOGUE > TEXT > LANGUAGES

and stresses that the dialogic situation “precedes both real dialogue and even the existence of a language” (Lotman 1990: 143–144). Obviously, Lotman's understanding of language or code is much broader than the strict definition applied to natural language only. Codes include such semiotic systems as natural language, cinema, music, limited-use systems such as traffic signs or computer codes, and even genres and styles; in other words, any structure that is able to generate meaning. Most importantly, Lotman's model emphasizes the creative function of the text alongside the function of information transfer. Meaning is therefore not a static relation of a signifier and its signified but a process of interpretation that happens at the intersection of different, albeit overlapping languages (Fig. 1). This creates a paradox if we assume that language should only transfer information as correctly as possible and without any hindrances or “noise”. Should we then admit that our languages are quite poorly designed? Quite the opposite, Lotman (1990: 15) argues that it is exactly this creative function of a text and the constant overlapping of numerous non-equivalent codes that makes possible the generation of meaning.

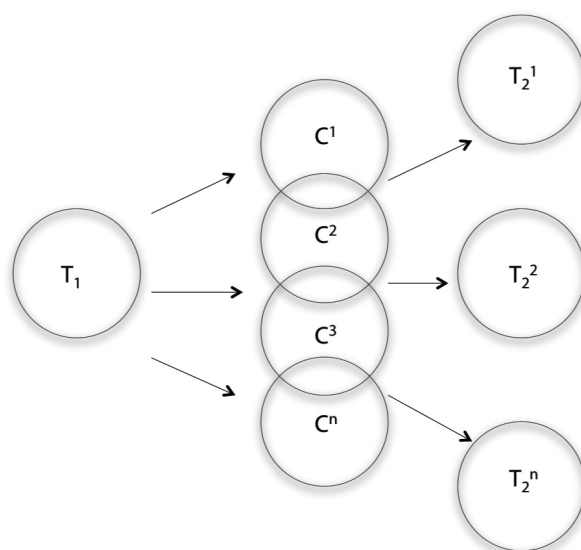


Figure 1. The asymmetrical translation (adapted from Lotman 1990: 15).

$T_1$  represents the original text;  $C^1$ ,  $C^2$ ,  $C^n$  represent a plural space of overlapping, but not identical, codes;  $T_2^{1,2,n}$  represent the plurality of possible texts on the receiver's end.

The postulate of the primacy of dialogue before language is not just a paradox for the sake of paradox but represents a quite pragmatic approach to communication. There are countless examples in our everyday communication that show that the need to impart a message precedes the creation of the message. For example, if I need to express that I like somebody, I will structure the message using one or several semiotic systems, based on the character of the assumed dialogue and the way I want to impart it to an addressee. I may say it in English or in another language; I may write a text to share it on social networks or to keep it for myself; I may create a video; I may even write a poem or a piece of music. There are numerous possibilities, which in turn create numerous, often multimodal, texts that are not equivalent to one another. Not only does the text structure existing languages, but it also creates new ones. The text thus becomes a sort of a “semiotic condenser”, a result of the “precipitation” of a particular message from the semiotic multilingual continuum.

Lotman's model of a polyglot text in fact challenged the linguocentric dogma of the 1970s and especially the infamous dichotomy of primary vs. secondary modelling systems adopted by Soviet semioticians, in which natural language is considered to be *the* primary modelling system and all other semiotic systems are built upon it. Already in 1971, Lotman and his colleague Boris Uspenskij directly questioned the Sapir-Whorf hypothesis and Benveniste's contention that language determines one's

culture (and therefore consciousness) and argued that languages are inseparable from culture (Lotman, Uspensky 1978).

However, does this mean that Lotman somehow diminishes the importance of natural language? On the contrary, he especially notes that natural language is the most powerful sign system:

We are immersed in the space of language. Even in the most basic abstract conditions, we cannot extract ourselves from this space, which simply envelops us, and yet it is a space of which we are also a part and which, simultaneously, is part of us. [...] We need to exert a tremendous effort to push ourselves beyond the limits of language and it is precisely to language that we ascribe our lies, deviations from the norm, and the majority of our defects and perversions. (Lotman 2009: 114)

Language permeates many semiotic systems (cinema, theatre, etc.), acting as “material” for them (for example, literature or poetry produce new meanings by altering language structure). In comparison with other semiotic systems, natural language also has the highest symbolic capacity, which allows it to be highly open to translation from other systems (reflected, for example, in ekphrasis).

It is interesting in that respect that Lotman describes rhetoric, or metaphor in a very general sense, as the minimal dialogic device that shifts the normative structure of language and allows for creation of new meanings. Lotman (1990: 49) argues that metaphor brings “the alien” from the outside and is not an intrinsic element of language. Language polysemy, synonymy, metaphors, and tropes are thus a direct consequence of a polyglot consciousness applied to the structure of language, and language is but *one* manifestation of our general semiotic capacity.<sup>1</sup>

## Semiosphere as extended mind

In the late 1970s and 1980s, Lotman extends the study of textuality onto larger semiotic entities and writes extensively on culture as a hierarchy of texts within texts, in which semiotic polyglottism (multilingualism) and the asymmetry of semiotic space function as its main internal mechanisms (see Lotman 1970, 1974, 1977[1970], 1982, 1984b, 1987a, 1992b, 1994; Lotman *et al.* 2013[1973]; Lotman, Uspensky 2013).

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<sup>1</sup> To avoid confusion, it should be noted that the term “polyglot consciousness” can also be found in Mikhail Bakhtin’s works (e.g., in Bakhtin 1975: 430). However, Bakhtin emphasizes the uniqueness of individual *voices* of presumably the same language (polyphony, heteroglossia), whereas Lotman emphasizes the dialogue of different *languages* as the minimal condition for meaning generation. For more on Bakhtin and Lotman see, e.g., Reid 1990; Kim Su Kvan 2003: 119–130; Semenenko 2012: 47–51.

Developing his holistic approach to culture, Lotman pays attention to other relevant domains such as the problem of artificial intelligence, brain asymmetry (e.g., Lotman 1979[1977], 1983, 1992c, 2005), and also biology, often drawing parallels between culture and the organism (see a comprehensive overview in Kull 1999).

It is therefore no coincidence that Lotman first used the term *semiosphere* in a paper presented at the Eighth Estonian Spring School on Theoretical Biology in May 1982 (Kull 2015: 260). The term then appeared in print in the article “On the semiosphere” published in *Trudy po znakovym sistemam* [*Sign Systems Studies*] 17 (Lotman 1984a). At the time, Lotman was primarily inspired by the works of the Russian geologist Vladimir Vernadsky on the noosphere and the biosphere of the Earth. In his seminal work *The Biosphere* (1926), Vernadsky, after the geologist Eduard Suess, described the biosphere as “a life-saturated envelope of the Earth’s crust” and studied the living organisms of the biosphere as “a particular body that cannot be entirely reduced to known physico-chemical systems” (Vernadsky 1998: 52). These ideas strongly resonated with Lotman’s views on the principles of semiosis and the process of meaning generation. In a letter from 1982, Lotman (1997: 629–630) develops Vernadsky’s postulate that life emerges from life and cannot emerge from inert matter, and states that any text must be preceded by another text and any developed civilization by another developed civilization. In the same vein, he says that any thought can originate only in another thought: “Only the antecedence of the semiotic sphere makes a message a message. Only the existence of intellect [*razum*] explains the existence of intellect”. In other words, Lotman reformulates his crucial postulate that the complex is primary and the simple is secondary, not vice versa, or, in the words of Mihhail Lotman (2014: 23), “simple models are the result of the investigator’s abstraction or the result of reduction or degeneration of complicated systems”. Just as the text is primary in relation to the sign, the unit of semiosis, “the smallest functioning mechanism is not the separate language but the whole semiotic space of the culture in question. This is the space we term the *semiosphere*” (Lotman 1990: 125; original emphasis).

Lotman especially stresses that the semiosphere is not just a static conglomerate of separate fixed semiotic systems or languages but a necessary *condition* for any act of communication to take place and any language to appear:

The semiotic universe may be regarded as the totality of individual texts and isolated languages as they relate to each other. In this case, all structures will look as if they are constructed out of individual bricks. However, it is more useful to establish a contrasting view: all semiotic space may be regarded as a unified mechanism (if not organism). In this case, primacy does not lie in one or another sign, but in the “greater system”, namely the semiosphere. The semiosphere is that same semiotic space, outside of which semiosis itself cannot exist. (Lotman 2005: 208)

Lotman points out that in contrast to the noosphere, which is a three-dimensional material space,

[...] the space of the semiosphere carries an abstract character. *This, however, is by no means to suggest that the concept of space is used, here, in a metaphorical sense.* We have in mind a specific sphere, possessing signs, which are assigned to the enclosed space. Only within such a space is it possible for communicative processes and the creation of new information to be realised. (Lotman 2005: 207; emphasis added, A. S.)

In other words, Lotman makes an important point that the semiosphere is not just another metaphor for “all the signs *en masse*” but is rather a concrete collective *mental* sphere in which all communication and meaning generation occurs.

Probably the most important aspect of the concept of semiosphere is that it emphasizes the idea that cognition is not solely an internal process but develops and is effectuated through interaction with other individuals, material objects, and other phenomena of reality. Formulated in this manner, the semiosphere is precursor of the notion of extended mind, which became increasingly popular after its introduction by Andy Clark and David Chalmers (1998). They developed a simple idea that mind is not limited to the processes in the head and extends to our environment. This implied, among other things, that language “is not a mirror of our inner states but a complement to them” and that the self is extended as well (Clarks, Chalmers 1998: 18). This active externalism has found a wide acceptance, for example, in Merlin Donald’s (2001) theory, which describes human consciousness in terms of a cognitive-cultural distributed network, or in Robert Logan’s (2007) model of extended mind, or in Richard Menary’s (2007) integrationist hypothesis, and in many other works (e.g., Cowley, Vallée-Tourangeau 2013; Fusaroli *et al.* 2014).

Lotman’s emphasis on the externality of the mind was in part his reaction to the dominant scientism and neophrenological tendencies of the 1960s–80s when the asymmetry of the human brain was studied as a possible neurophysiological basis of thought and consciousness. The majority of these studies were characterized by a pronounced universalistic and “naturalistic” bias and a simplistic reductionism that pictured the hemispheres as representing two “languages”, two models of consciousness that reflect the world in different ways (see more in Semenenko 2011; 2015). Nowadays, history is almost repeating itself with phrenological and “biologistic” discourses often coming to the fore, although they do meet with some criticism (the most vivid example of which is Tallis 2011). Already in the 1980s, Lotman showed that in order to understand human culture it is not necessary to go deep inside the brain and attempt to find the answers in its microstructure, but rather one has to look at the semiotic space that envelops us and makes up our conscious experience.

## Semiosphere as collective consciousness

In his presentation of the concept, Lotman (1984a: 22) defines all semiospheric levels – from human personality to the text to larger semiotic unities (e.g., culture) – as “semiospheres inserted into one another”, thus reiterating his thesis that culture is isomorphic with the individual consciousness (intellect). Consequently, culture becomes an extension of a human mind, a universal mind, and an individual mind in turn becomes a microculture. The semiosphere represents not only the collective mental sphere of humankind but also becomes a model of human cognition, congenial to the notion of pre-language semiotic capacity or modelling property, which is advocated by a number of scholars including Thomas Sebeok (1988: 77).<sup>2</sup> From that point of view, our ability to create, operate and modify new signs, texts, and sign systems is unparalleled by other species and turns out to be one of the most important features of *Homo sapiens*.

The thesis of the inherent dialogic predisposition of humans is supported by the recent studies of infant communication (see, e.g., Trevarthen 2011; Zlatev, Andrén 2009; Tomasello 1999). Lotman himself (inspired by a 1978 article of John Newson)<sup>3</sup> refers to the situation when the need for dialogue between the mother and her newborn child creates unique messages and languages. Indeed, as any parent knows, a child first develops the idiosyncratic family-specific dialect, and only then learns the normative language. As Deacon (1997: 135) argues, children acquire language first through its structure, quickly learning “the most global structure-function relationships of utterances” and only then differentiate between individual symbols. This process is evident in children’s typical mistakes (e.g., ‘goed’ instead of ‘went’ in

<sup>2</sup> As is known, Ferdinand de Saussure (1966: 10) reduced this semiotic property to linguistic capacity: “There exists a more general faculty which governs signs and which would be the linguistic faculty proper”. Most recently, Hauser and Chomsky, among others, argued that only the notion of the language faculty in the narrow sense (FLN), by which they understand recursion, is a uniquely human feature, although they do not discuss how this feature could have occurred in the first place (Hauser *et al.* 2010). For Lotman, this approach would be too narrow and linguocentric because for him language is a direct product of our qualitatively and quantitatively different forms of modelling.

<sup>3</sup> Newson’s (1978: 41, 42) conclusion could especially have caught Lotman’s attention: “To sum up: the dialogue between a human infant and his regular caretaker represents a ‘cultural construction’ of the utmost importance to the infant’s whole future development. In attempting to describe the complexities of interaction during the first year of life, the very notion of dialogue is inescapable, and can most fruitfully be conceptualised as an alternating sequence of communication gestures. [...] From the baby’s point of view it is only by being continually involved, as a participant actor, within an almost infinite number of such sequences that he is finally brought into the community of language. In short, it is only because he is treated as a communicator that he learns the essential human art of communication”.

English or '*gedde*' in place for '*gav*' ['gave'] in Swedish), which demonstrate their mastery of the dominant structures of language and that they only later learn that it is full of irregularities and exceptions. This also is a remarkable reflection of Lotman's idea of the primacy of the text before the sign (see Lotman 1981, 2005: 205): the text creates its language and not *vice versa*.

In other words, children at first deploy a holistic mode in communication and only then slowly learn to distinguish between different sign systems. The "mystery" of language acquisition no longer seems mysterious if we acknowledge that children are exposed not to only one language but also to the semiosphere. Being immersed in a multimodal and multilingual environment from their very birth, children undergo a long and intensive process of interacting with the existing collective mind and only after some time (approximately five years) become fully functional semiotically. Children's polyglot potential does not develop on its own; it needs constant stimulation. The case of feral children shows most vividly what happens to someone deprived of the contact with the semiosphere. The virtually unlimited semiotic capacity of children also manifests itself in the case of home signers, deaf children who exhibit a clear ability to create *ad hoc* signs and even sign systems (e.g., Goldin-Meadow 1993; Goldin-Meadow, Mylander 1998). On a group level, this ability to create conventional sign systems is also evident in the case of Bedouin and Nicaraguan sign languages (Arbib 2012: 296–321) and aboriginal sign languages (Sebeok 1991: 128–167).

## The anthropocentric semiosphere vs. animal semiosis

Since Lotman's death in 1993, the concept of semiosphere has been interpreted in various ways (e.g., as the world of multiple truths, the set of all interconnected *umwelten*, the totality of interconnected signs; see Kull 2005: 178–80). Jesper Hoffmeyer (1997) coined the same term in 1993 as well, independently of Lotman, and defined it more broadly as a global semiosphere comprising the totality of life processes in the world, "a semiotic dimension" of the biosphere. Some other scholars also emphasize the connection of the semiosphere with the biosphere: Petrilli and Ponzio (2005: 551) maintain that "from the perspective of global semiotics, the *semiosphere* converges with the *biosphere* and can be characterized as the *semiobiosphere*" (original emphasis). The human semiosphere thus becomes a part of a larger semiobiosphere, the sphere of all life and semiosis. Winfried Nöth (2006: 258) notes in a similar vein:

The concepts of bio- and semiosphere must hence be revised as follows: biosphere and semiosphere are not two separate spheres of the universe, but the biosphere is included in the semiosphere, and semiosis begins with life, if not in the physical world before life appears.



In their overview of the concept, Kaie Kotov and Kalevi Kull (2011: 191) define the semiosphere as “the relational biosphere” and “the set of relations that comprises everything living”. They make an important correction noting that if the biosphere is understood in Vernadsky’s terms, as a physical entity, the matter, it is not identical to the semiosphere. Anton Markoš (2014: 496) makes yet another attempt to unify the two notions and defines life as “a system born, endowed with semiosis, with history”. Mihhail Lotman (2014: 25) makes what is probably the clearest distinction between the semiosphere and the biosphere as “the relationship between two possible worlds”, the former governed by semiotic mechanisms and the latter governed by the laws of physics and biology. Finally, other theories have a remote relation to Lotman’s original concept, like the concept of the symbolosphere as a part of the semiosphere, the sphere of symbolic signs only (see Logan, Schumann 2005; Logan 2007 – the authors, however, do not provide any reference either to Lotman or Hoffmeyer).

It seems, then, that the majority of contemporary studies follow Hoffmeyer’s much broader definition. For Lotman, as we have seen, the semiosphere is a product first and foremost of a *conscious human* mind. For example, already in *The Structure of the Artistic Text*, Lotman (1977: 7) refuses to call biochemical regulation of signals in the nervous system a language because this process does not involve a conscious mind. This anthropocentrism was predetermined by Lotman’s focus on the uniqueness of human culture because if one extends intelligence (in Lotman’s sense) to bees and even chemical reactions, there appears to be nothing specific about human cognition. In that sense especially, Nöth’s extension of semiosphere into the physical world directly contradicts both Vernadsky’s and Lotman’s contention that life is opposed to inert matter.

The virtue of Lotman’s understanding of the semiosphere is that it functions both as an object of analysis and a metaconcept (see Torop 2005: 164–65; Kull 2005: 184), a tool for the study of human cognition. It is especially noticeable in those rare cases when Lotman – primarily in *The Unpredictable Workings of Culture* (1989) and *Culture and Explosion* (1992) – discusses nonhuman forms of semiosis to illustrate his thesis of the uniqueness of human consciousness. One of the major points of difference for Lotman is the dialogicity and polyglottism of human semiosphere. For example, when Lotman discusses symbolic behaviour of animals, he notes that the dialogue between animals essentially differs from the dialogue between humans: animals use one concrete language that eliminates ambivalence in communication, and the interpretive possibilities of any message in animal interaction are predetermined. That is also why there is a great discrepancy between human dialogue and the “one-sided animal-training” (Lotman 2005: 218). Human communication, in contrast, always presupposes a conflict between collective and individual memory, between various individual languages (Lotman 2014: 54–55).

*Homo sapiens* is the only species that is polyglot in two senses: it is collectively polyglot, speaking roughly about seven thousand languages, and also individually polyglot in the sense that humans are using, creating and altering a variety of semiotic systems. As was shown earlier, these languages are not equivalent to one another, but at the same time they are mutually interprojected and have various degrees of translatability. The continuous dialogue between these languages creates tension, which is necessary for the generation of meaning. As a consequence, we can create multivalent and unpredictable texts, that is, “art”, in which the informative function is overshadowed by the creative one. Lotman (2014: 165) goes on to state that the human ability to reflect is “essentially impossible without art”, reiterating his thesis from the earlier period that art functions as a cognitive device: it perceives life not analytically but by recreating reality by its own means, thus being an indispensable tool of thought (see Lotman 2011; Lotman 1977: 18, 250–51).

An important remark that needs to be made here is that the polyglot consciousness is not synonymous with multimodal communication and cannot be reduced to it. In recent decades, the linguocentric view of human culture that focused primarily on spoken language has been challenged by gesture research, highlighting the multimodal aspect of human semiosis and the role of gestures in cognition of modern humans (see Kendon 2004; Lieberman 2000; Armstrong 1999).<sup>4</sup> Nevertheless, to argue that human cognition is essentially multimodal is not enough. Many species that communicate multimodally remain essentially monoglot because in their communication systems different modalities are used within one sign system. In this kind of system any signal or message is unequivocal and excludes (mis)interpretation. The signifier in a monoglot system refers only to one stable signified, and deviations from the “hard-wired” code are anomalous and rare. On the contrary, the sign produced by the polyglot consciousness, as described by Peirce (CP 2.303), is always a part of an endless chain of signifiers that produces an infinite number of meanings. As a consequence, humans require texts with a high degree of *autocommunicative* function, as opposed to momentary auditory and/or visual messages of other species.

In autocommunication the message is transmitted not between two different physical entities but a person addresses him/herself. The function of autocommunication is not only mnemonic – in that case one individual functions

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<sup>4</sup> These studies provide serious counterarguments against the existence of the hypothesized innate hierarchical structure of language, advocated primarily by Noam Chomsky and Steven Pinker (1994). For example, Deacon 1997, Armstrong 1999, Tomasello 1999, and Lieberman 2000 all demonstrate that language is a learned skill that makes use of a distributed network, including the neocortex and subcortical basal ganglia. As Deacon (1997: 310) puts it, the evolution of human brain is “more an adaptation of the brain *to* language than an adaptation of the brain *for* language” (original emphasis).

as two, transmitting a message in time (Lotman 1977: 8–9) – but also meaning-generating. In autocommunication, it is not the message but the code and the context that change, and the message, which is already “received” by the addressee, acquires new meaning through reinterpretation. Autocommunication lies at the core of all communication but is especially evident in mythological texts that are designed to preserve the model of the universe (Lotman 1990: 153; Lotman, Uspenskij 1977).

Interestingly, in one of his interviews from 1990, Lotman compares animal behaviour and “language” to “our language of folklore”, that is, myth. He goes on to state that the unpredictability of humans gave them an evolutionary advantage over other species:

[Animal] behavior is a language similar to our language of folklore. It is repeated as the same, and every time created anew. Humans, however, consider the repeated forms of behavior to be secondary, and promote unexpected behavior. Evidently, man when he appeared resembled a mad animal, and I suppose that was the reason why this relatively weak creature could survive and kill much bigger animals. They were not able to predict his behavior. (Quoted in Kull 1999: 124).

Furthermore, the dialogicity of our consciousness has a direct impact on our behaviour. Lotman emphasizes that animals are fully subordinated to the biological law of cyclical reiteration whereas humans are only partially subject to it:

Cyclical reiteration is a law of biological existence; the animal world (and the world of man as part of this world) is subordinate to it. However, man is not fully submerged in this world: as a “thinking reed” – he constantly finds himself at odds with the basic laws of his surroundings. (Lotman 2009: 28)

If humans differentiate between the past, the present, and the future, “the cyclical world of nature equates past and future” and effectively replaces prediction with memory (Lotman 2014: 165). Animal behaviour is therefore ritualistic, whereas humans are able to break the rules and become unpredictable. Animals “play by the rules”; humans may “cheat” and lie, that is, use “an unmotivated and disinterested untruth” (Lotman 2009: 129).

Lotman repeatedly emphasizes that the conflict between the collective and the individual, that is, the ability “to break the rules”, seems to be the main driving force of our development. The conscious choice of a thinking individual becomes an active factor of historical development, which differentiates “human systems” from biological and artificial ones in particular (Lotman 1992a: 469–70). From the point of view of an animal, humans are, in Lotman’s words, “insane” creatures who paradoxically depend on the ever-growing avalanche of semiotic systems and texts. Lotman (1979) notes that the capacity to “go out of one’s mind”, to behave in an unpredictable manner, is

a crucial feature of human intellect: a thinking mechanism must in principle be able to “go mad”, as an alternative to rational behaviour. Culture, in this respect, can be described as a mechanism of collective intelligence because it too has “pathological”, irregular periods in its functioning, described as “cultural explosions” (Lotman 2009). This “anomaly” paradoxically makes it possible for us to reflect on the boundaries of our own *umwelt* – the semiotic sphere of an organism as the organism perceives it<sup>5</sup> – and to conceive of other *umwelten*.<sup>6</sup>

The aforementioned oppositions can be helpful for understanding the differences between human and nonhuman semiosis (Table 1).

*Table 1.* Oppositions mentioned by Juri Lotman while comparing human and nonhuman semiosis.

Nonhuman animal	Human
monoglot	polyglot
collective	individual vs. collective
predictable	unpredictable
cyclic	linear
ritual	invention
play	art
signals	texts

## Concluding remarks

One reason why the semiosphere has become such an influential concept in semiotics is that it can be used both as a description of the entire sphere of semiosis and as a model of human cognition. As this article strove to demonstrate, Juri Lotman’s narrow, anthropocentric, understanding of the semiosphere highlights the fact that only humans can be considered polyglot both collectively and individually. In the final analysis, the cumulative cultural evolution of humans or the so-called “ratchet

<sup>5</sup> The concept of *umwelt* was introduced by Jakob von Uexküll (1864–1944) and, although not used by Lotman, is functionally similar to the concept of the individual semiosphere. On *umwelt* and the semiosphere see, e.g., Mihhail Lotman 2002.

<sup>6</sup> A number of studies of “animal cultures” vaguely define culture as “group-specific behavior that is at least partly acquired from social influences” (McGrew 1998: 322), thus ignoring the crucial differences between nonhuman and human cultures. Another group of studies have searched for evidence of the theory of mind in nonhuman primates, but even in the most optimistic view, even if it can be surmised that some animals do have mental state concepts, it cannot be argued that they are able to reflect about their own or somebody else’s mental states (Heyes 1998).

effect” (Tennie *et al.* 2009) and the unprecedented scale of cultural inheritance and niche construction (e.g., Odling-Smee, Laland 2011; Laland, Hoppitt 2003; Sinha 2009) can only be explained by the fact that our species somehow managed to transfer and preserve information in the external collective semiosphere. That is, they became semiotically polyglot beings. The question of how exactly our ancestors managed to go beyond the restraints of the animal semiotic threshold and their own *umwelt* remains the “hardest problem of science” (Christiansen, Kirby 2003), and answering it extends beyond the goals of the present paper. However, as we have seen, Lotman’s focus on the polyglot structure of human collective consciousness makes an important contribution to the question of human vs. nonhuman semiosis and may be useful for the further study of human cognition and human evolution.<sup>7</sup>

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### ***Homo polyglottus*: семиосфера как модель сознания**

Понятие семиосферы Юрия Лотмана трактуется сейчас достаточно широко и имеет многочисленные интерпретации. Эта статья возвращается к первоначальному «антропоцентрическому» толкованию семиосферы как коллективного интеллекта/сознания и анализирует то, как Лотман подходит к вопросу уникальности человека и каким образом он подчеркивает разницу между семиозисом человека и других животных. В отличие от большинства работ, которые фокусируются на символическом сознании и мультимодальности как главных отличительных признаках человека как вида, Лотман выделяет диалогичность и полиглотизм как основу человеческой культуры. В этой трактовке семиосфера представляет собой важный инструмент для изучения сознания человека и его когнитивной эволюции.

### ***Homo polyglottus*: semiosfäär kui inimkognitsiooni mudel**

Võib väita, et semiosfäär on kõige mõjukam Juri Lotmani poolt välja töötatud mõistetest, ning sellele on antud mitmesuguseid uustõlgendusi. Artiklis naastakse Lotmani algse “antropotsentrilise” semiosfäärikäsitluse juurde kollektiivse intellekti/teadvusena ning väisatakse Lotmani peamiste argumente tema arutelus inim- vs. mitteinimsemioosi üle, paigutamaks seda kognitiivsemiootika ning eriti inimliku ainulaadsuse küsimuse moodsasse konteksti. Erinevalt suuremast osast uurimustest, mis keskenduvad sümbolsele teadvusele ja multimodaalsele kommunikatsioonile kui eriomaselt inimlikele joontele, rõhutab Lotman inimkultuuri ainulaadsete joontena polüglotismi ja dialoogilisust. Sel kombel sõnastatuna kasutatakse semiosfääri mõistet kontseptuaalse raamina nii inимтунnetuse kui ka inimeste kognitiivse evolutsiooni uurimisel.